IN THE CLAIMS

Amend the claims as follows:

1. (original) A method comprising:

sensing respiratory information related to tidal volume;

based at least in part on the respiratory information, determining if the tidal volume is less than a limit; and

if the tidal volume is less than the limit, calling for diaphragm activation at a stimulation power based on a nonincreasing monotonic relationship with respect to increasing tidal volume.

2. (original) The method of claim 1 wherein the diaphragm activation includes a member selected from the group consisting of phrenic nerve stimulation and diaphragm stimulation.

3. (original) The method of claim 1 further comprising delivering the diaphragm activation.

4. (original) The method of claim 3 wherein the delivering the diaphragm activation occurs during inspiration caused in part by intrinsic activity.

5. (original) The method of claim 3 further comprising monitoring respiratory information related to upper airway patency.

6. (original) The method of claim 1 wherein the limit relies on historical respiratory information unaffected by Cheyne-Stokes respiration.

7. (original) The method of claim 1 wherein the respiratory information includes information selected from the group consisting of plethysmography information, IEGM,

impedance information, neural activity information, pressure information, blood oxygen information, and blood carbon dioxide information.

8. (original) The method of claim 1 wherein the calling for diaphragm activation intends to increase tidal volume.

9. (original) The method of claim 8 wherein the calling for diaphragm activation intends to increase tidal volume to a tidal volume based at least in part on historical respiratory information.

10. (original) The method of claim 1 wherein if the decrease in tidal volume exceeds a collapse limit, then determining that the calling for diaphragm activation at the stimulation power will cause an upper airway collapse.

11. (original) The method of claim 10 further comprising inhibiting the calling for diaphragm activation based on the determining.

12. (original) A method comprising:

sensing respiratory information related to tidal volume;

comparing the respiratory information to a limit based on historical respiratory information related to tidal volume;

if the respiratory information compares unfavorably to the limit, determining an error related to tidal volume; and

calling for diaphragm activation at a stimulation power based on a nonincreasing monotonic relationship with respect to decreasing error.

13. (original) The method of claim 12 further comprising delivering the diaphragm activation at the stimulation power and determining whether an airway collapse occurred in response to the delivering.

14. (original) The method of claim 12 further comprising a parameter to determine stimulation power based on the error.

15. (original) The method of claim 12 further comprising a parameter to determine stimulation power based on the error, delivering the diaphragm activation at the stimulation power, determining whether an airway collapse occurred in response to the delivering and adjusting the parameter if an airway collapse occurred.

16. (original) A method comprising:

sensing respiratory information related to tidal volume;

determining an error between the respiratory information related to tidal volume and historical respiratory information related to tidal volume; and

if the error exceeds an error limit, calling for diaphragm activation at a stimulation power based on a nonincreasing monotonic relationship with respect to decreasing error.

17. (original) The method of claim 16 wherein the error relies on the most recent respiratory information.

18. (original) The method of claim 16 wherein if the error limit exceeds an airway collapse limit, inhibiting the calling for diaphragm activation.

19. (original) The method of claim 16 wherein if the error limit exceeds an airway collapse limit, decreasing the stimulation power.

20. (original) An implantable apparatus comprising:

an input to receive information related to tidal volume;

a microprocessor configured to use the information to determine if tidal volume is less than a limit and if the tidal volume is less than the limit to call for diaphragm activation at a stimulation power based on a nonincreasing monotonic relationship with respect to decreasing difference between the tidal volume and the limit.

21. (original) The implantable apparatus of claim 20 wherein the input includes a connector to connect a lead to the apparatus.

22. (original) The implantable apparatus of claim 20 wherein the information related to tidal volume comprises information selected from the group consisting of plethysmography, IEGM, impedance information, neural activity information, pressure information, blood oxygen information, and blood carbon dioxide information.

23. (original) The implantable apparatus of claim 20 wherein the limit relies on historical information related to tidal volume unaffected by Cheyne-Stokes respiration.

24. (original) The implantable apparatus of claim 20 further comprising a pulse generator responsive to the call for diaphragm activation.

25. (original) The implantable apparatus of claim 20 further comprising an output to deliver the stimulation power.

26. (original) The implantable apparatus of claim 25 wherein the output includes a connector to connect a lead to the apparatus.

27. (original) The implantable apparatus of claim 20 further comprising a pulse generator responsive to the call for diaphragm activation, a lead bearing one or more electrodes electrically connectable to the pulse generator and positionable proximate to a phrenic nerve.

28. (original) The implantable apparatus of claim 20 further comprising a pulse generator responsive to the call for diaphragm activation, a lead bearing one or more electrodes electrically connectable to the pulse generator and positionable proximate to a hemidiaphragm.

29. (original) The implantable apparatus of claim 20 further comprising an input to receive information related to upper airway patency.

30. (original) The implantable apparatus of claim 29 wherein the microprocessor is further configured to adjust the stimulation power based at least in part on the information related to upper airway patency.

31. (original) The implantable apparatus of claim 20 further comprising an output to delivery cardiac stimulation.

32-38. (canceled)